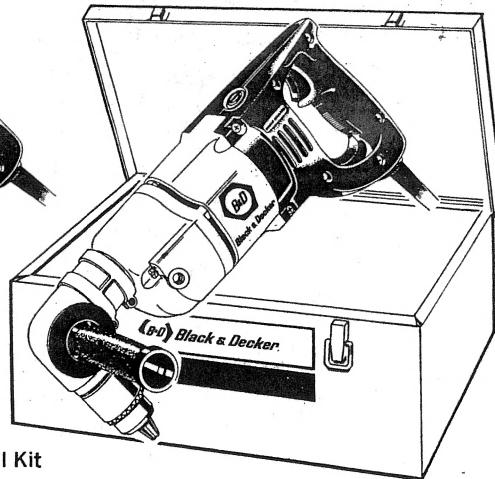
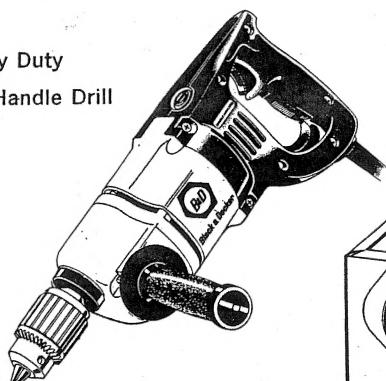


Black & Decker

OWNER'S MANUAL

Heavy Duty
End Handle Drill



Right Angle Drill Kit

Heavy Duty End Handle Drills, rated for continuous production use. Allows maximum pressure on drill bits for faster cutting into wood, metal, or masonry. Tools available include $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " drills and $\frac{1}{2}$ " heavy duty right angle drill kits for plumbers and electricians.

For personal safety and proper operation of End Handle Drills please read all of the Safety Rules and Instructions in this booklet. Don't forget to send in the Owner Registration card.

THANK YOU for buying BLACK & DECKER!

HEAVY DUTY END HANDLE DRILL

$\frac{1}{4}$ " DRILL	$\frac{3}{8}$ " DRILL	$\frac{1}{2}$ " DRILL	$\frac{1}{2}$ " RIGHT ANGLE DRILL KIT
Cat. No.	Cat. No.	Cat. Nos.	Cat. Nos.
1070-09 1070-21	1190-09 1190-21	1335-09 1338-09 1339-09	1345-09 1348-09

IMPORTANT INFORMATION

SAFETY RULES FOR POWER TOOLS

- 1. KNOW YOUR POWER TOOL**—Read owner's manual carefully. Learn its applications and limitations as well as the specific potential hazards peculiar to this tool.
- 2. GROUND ALL TOOLS — UNLESS DOUBLE-INSULATED.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If adapter is used to accommodate two-prong receptacle, the adapter wire must be attached to a known ground. Never remove third prong.
- 3. KEEP GUARDS IN PLACE** and in working order.
- 4. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 5. AVOID DANGEROUS ENVIRONMENT.** Don't expose power tools to rain. Don't use power tool in damp or wet locations. And keep work area well lit.
- 6. KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
- 7. STORE IDLE TOOLS.** When not in use, tools should be stored in dry, high or locked-up place — out of reach of children.
- 8. DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
- 9. USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy duty tool.
- 10. WEAR PROPER APPAREL.** No loose clothing or jewelry to get caught in moving parts. Rubber gloves and footwear are recommended when working outdoors.
- 11. USE SAFETY GLASSES** with most tools. Also face or dust mask if cutting operation is dusty.
- 12. DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil and sharp edges.
- 13. SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
- 14. DON'T OVERREACH.** Keep proper footing and balance at all times.
- 15. MAINTAIN TOOLS WITH CARE.** Keep tools sharp at all times, and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 16. DISCONNECT TOOLS.** When not in use, before servicing; when changing accessories such as blades, bits, cutters, etc.
- 17. REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- 18. AVOID ACCIDENTAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
- 19. OUTDOOR USE EXTENSION CORDS —** When tool is used outdoors, use only extension cords suitable for use outdoors and so marked.
- 20. DO NOT OPERATE** portable electric tools in gaseous or explosive atmospheres. Motors in these tools normally spark, and the sparks might ignite fumes.

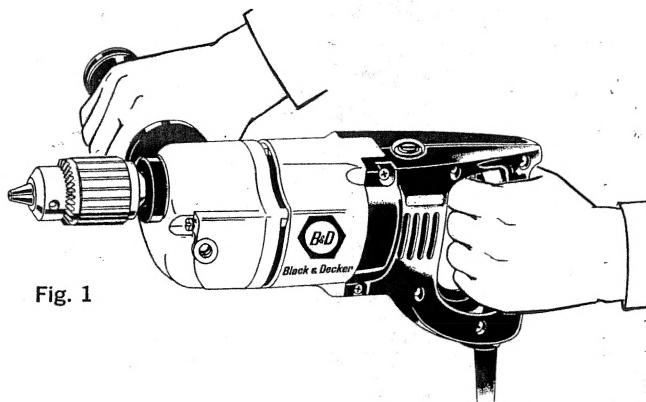


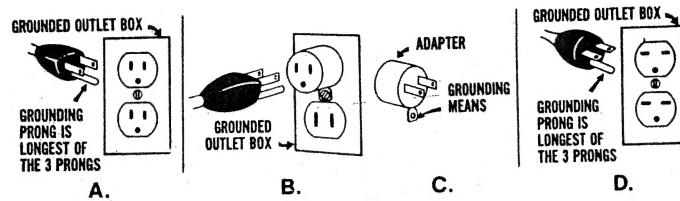
Fig. 1

CAUTION: When drilling into walls, floors or wherever "live" electrical wires may be encountered, DO NOT TOUCH THE CHUCK OR ANY FRONT METAL PARTS OF THE TOOL! Hold the Tool only by the insulated gripping handles provided (see Fig. 1).

Always use side handle provided in order to properly control torque (twisting action) of the drill.

GROUNDING

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with an approved three-conductor cord and three-prong grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect (or green and yellow) conductor in the cord to a live terminal. If your unit is for use on less than 150 volts, it has a plug like that shown in Figure A. If it is for use on 150 to 250 volts, it has a plug like that shown in Figure D. An adapter, Figures B and C, is available for connecting Figure A plugs to two-prong receptacles. The green-colored rigid ear, lug, etc, must be connected to permanent ground such as a properly grounded outlet box. No adapter is available for a plug as shown in Figure D. Adapter shown in Figures B & C is not for use in Canada.



We recommend that you NEVER disassemble the tool or try to do any rewiring in the electrical system. Any such repairs should be performed only by B&D Service Centers or other qualified service organizations. Should you be determined to make a repair yourself, remember that the green colored wire is the "grounding" wire. Never connect this green wire to a "live" terminal. If you replace the plug on the power cord, be sure to connect the green wire only to the grounding (longest) prong on a 3-prong plug.

EXTENSION CORD

When using the tool at a considerable distance from power source, a 3-conductor, grounding-type extension cord of adequate size must be used for safety, and to prevent loss of power and over-heating. Use the table below to determine minimum wire size.

Use only three wire extension cords which have three-prong grounding-type plugs and three-pole receptacles which accept the tool's plug. Replace or repair damaged cords.

Ampere rating (on nameplate)	0 to 2.0	2.10 to 3.4	3.5 to 5.0	5.10 to 7.0	7.10 to 12.0	12.1 to 16.0
Ext. Cable length	Wire Size (A.W.G.)					
25 ft.	18	18	18	18	16	14
50 ft.	18	18	18	16	14	12
75 ft.	18	18	16	14	12	10
100 ft.	18	16	14	12	10	—
150 ft.	16	14	12	12	—	—
200 ft.	16	14	12	10	—	—

MOTOR

Your Black & Decker tool is powered by a B & D-built motor. Be sure your power supply agrees with the nameplate marking.

Volts 50/60 Hz or "AC only" means your tool must be operated only with alternating current and never with direct current. Volts DC-60Hz or AC/DC means your tool may be operated with either alternating or direct current.

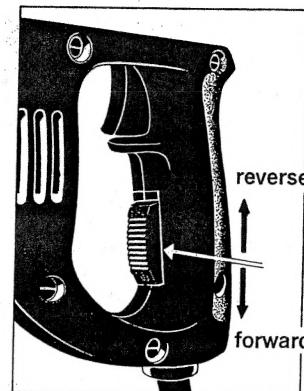
Voltage decrease of more than 10% will cause loss of power and overheating. All B&D tools are factory tested; if this tool does not operate, check the power supply.

MOTOR BRUSHES

CAUTION: Disconnect tool from power source before inspection or servicing. Your tool uses the B&D "Checkpoint" Brush System. This insures that the tool will stop when the brushes wear out. This prevents damage to the motor. Brushes should be regularly inspected for wear if your tool has exterior brush inspection caps. When the cap is unscrewed, the spring and brush assembly may be withdrawn from the tool. Keep brushes clean and sliding freely in their guides. Inspection should be made every two to six months, depending upon usage.

SWITCHES

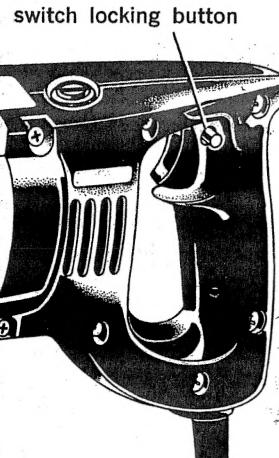
Pulling the Trigger Switch turns the tool "ON"; releasing the trigger turns the tool "OFF". $\frac{1}{2}$ " drills have reversing capability. For controlling the rotational direction of the spindle, there is a slide switch built into the handle. For drilling, this switch is put in the down, "F" (forward) position. For easing drill bits out of tight holes, move the slide switch up to the "R" (reverse) position. The switch provided is a common part with other tools. Ignore "Hi/Lo" marking for this tool. A built-in mechanical interlock prevents changing the direction of the tool with the Slide Switch unless the Trigger Switch is released, turning the tool "OFF" during the directional change. After any reversing, return switch to forward position.



SWITCHES (Continued)

$\frac{1}{4}$ " and $\frac{3}{8}$ " drills have a switch locking button. This button permits locking the trigger in the full "ON" position for continuous operation. To lock trigger in "ON" position depress trigger and push in locking pin (located next to trigger). To release locking mechanism, depress and release trigger.

For maximum tool life avoid excessive reverse operation. For those operations where the tool is used primarily in reverse, see your Black and Decker Distributor or Black and Decker Service Center.

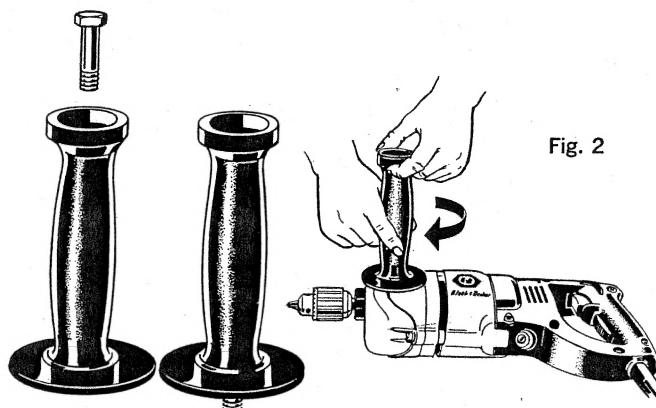


CLEANING

With the tool motor running, blow dirt and dust out of all air vents with dry air at least once a week.

LUBRICATION

Your tool was properly lubricated before leaving the factory. In from two to six months, depending upon use, take or send your tool to a Black & Decker Service Center, or Authorized Service Station, for a complete cleaning, inspection and relubrication. Tools used constantly on production or heavy duty jobs or exposed to heat may require more frequent lubrication. Tools "out of service" for long periods should be refurnished before being put back into service.



ATTACHING SIDE HANDLE

Drop the hexagon head bolt into the handle. Several threads will protrude thru the handle. Engage these threads into the threaded hole in the tool and turn clockwise until tight (Fig. 2). During tightening, the hexagonal head of the bolt is seated into a socket within the handle. The Handle/Bolt when assembled properly will remain intact when moving the side handle to the opposite side of the tool.

OPERATION

CAUTION: Always unplug the tool when attaching or changing bits or accessories.

1. Open chuck jaws by turning collar with fingers and insert shank of bit about $\frac{3}{4}$ " into chuck. Tighten chuck collar by hand. Place chuck key in each of the three holes, and tighten in clockwise direction. It's important to tighten chuck with all three holes. To release bit, turn chuck key counter clockwise in just one hole, then loosen chuck by hand.
2. Use sharp drill bits only. For WOOD, use twist drill bits, spade bits, power auger bits, or hole saws. For METAL, use high-speed steel twist drill bits or hole saws. For MASONRY, such as brick, cement, cinder block, etc., use carbide-tipped bits.
3. Be sure the material to be drilled is anchored or clamped **firmly**. If drilling thin material, use a wood "back-up" block to prevent damage to the material.
4. Always apply pressure in a straight line with the bit. Use enough pressure to keep drill biting, but do not push hard enough to stall the motor or deflect the bit.
5. Hold drill firmly to control the twisting action of the drill. Use side handle.
6. IF DRILL STALLS, it is usually because it is being overloaded or improperly used. RELEASE TRIGGER IMMEDIATELY, remove drill bit from work, and determine cause of stalling. DO NOT CLICK TRIGGER OFF AND ON IN AN ATTEMPT TO START A STALLED DRILL — THIS CAN DAMAGE THE DRILL.
7. To minimize stalling on breaking through the material, reduce pressure on drill and ease the bit through the last fractional part of the hole.
8. Keep the motor running when pulling the bit back out of a drilled hole. This will help prevent jamming.

DRILLING IN METAL

Use a cutting lubricant when drilling metals. The exceptions are cast iron and brass which should be drilled dry. The cutting lubricants that work best are sulphurized cutting oil or lard oil; bacon grease will also serve the purpose. Aluminum is best drilled with kerosene.

DRILLING IN WOOD

Holes in wood can be made with the same twist drills used for metal. These bits may overheat unless pulled out frequently to clear chips from the flutes. For larger holes, use Power Drill Wood Bits. Work that is apt to splinter should be backed up with a block of wood.

GEARED CHUCKS

1. Always completely insert the shank of the drill bit or accessory in the chuck. This permits full gripping power and prevents cocking the chuck jaws. When using drill bits or accessories with 3 "flats" on the shank, the chuck jaws should be located on the centers of these flats.
2. Use all three holes in the chuck body to tighten the jaws (Fig. 3). Insert the chuck key into each hole and tighten as much as possible. To release the drill bit, use the chuck key in only one hole.
3. Use only a chuck key to tighten or loosen the chuck jaws.

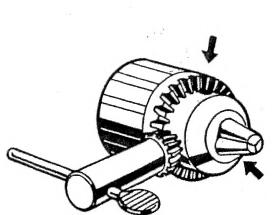


Fig. 3

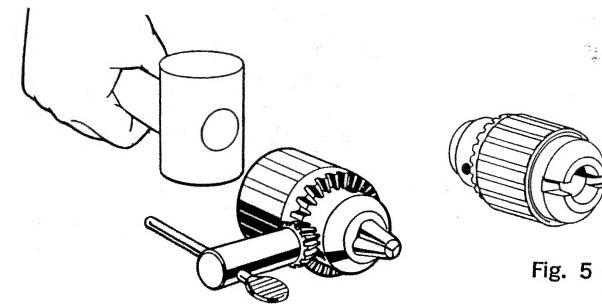


Fig. 5

Fig. 4

CHUCK REMOVAL AND ATTACHMENT

1. For geared chucks which are threaded directly on or into the drill (type of chuck used on $\frac{1}{4}$ " and $\frac{3}{8}$ " drills), use the following method: Place the chuck key in the chuck. Using a hammer or other similar object, strike the key sharply in the same direction that the tool normally runs. (See Fig. 4). This will loosen the chuck so that it can be unscrewed by hand.

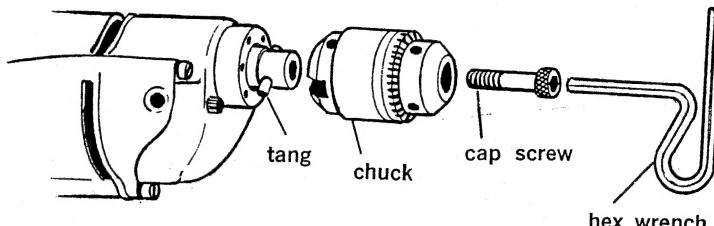
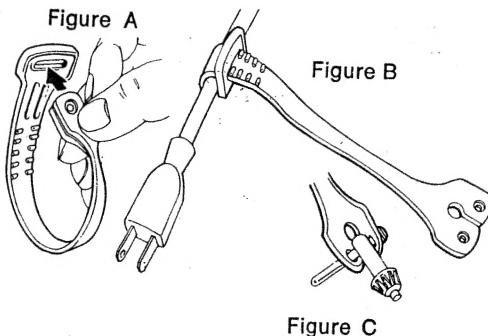


Fig. 6

2. For geared chucks which are tang driven (type of chuck used on $\frac{1}{2}$ " drill, see Fig. 5). Open chuck jaws all the way to gain access to the cap screw inside chuck (see Fig. 6). Insert hex wrench and remove cap screw (right hand thread). Pull chuck straight off spindle. Do not try to unscrew chuck.



CHUCK KEY HOLDER

1. Push double-hole end of Holder through slot in other end of Holder (Figure A).
2. Slip loop over electric plug and draw loop tight around cord (Figure B).
3. Push ends of Chuck Key Handle through two holes in end of Holder (Figure C).

ACCESSORIES

Recommended accessories for your tool are shown in the B&D Industrial Catalogs.

CAUTION: The use of any other accessory or attachment might present a hazard.

- **HEAVY DUTY RIGHT ANGLE**

ATTACHMENT Cat. No. 13600

Drill RPM. can be increased to 1½ times original speed or reduced to ⅔ of original speed. Chuck not included. Use chuck on drill. See Instruction Bulletin No. 8276.

- **REPLACEMENT CHUCK & CHUCK KEY**

B&D Drill Cat. No.	Chuck & Key Cat. No.	Chuck Key Only B&D No.
1070-09	38689	7705-L
1190-09	38690	4794-L
1335-09	66903	4794-L
1338-09	66903	4794-L
1339-09	66903	4794-L
1070-21	38689	7705-L
1190-21	38690	4794-L

IMPORTANT

To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment (including brush inspection and replacement) should be performed by Black & Decker Service Centers or other qualified service organizations, always using Black & Decker replacement parts.

COMMERCIAL/INDUSTRIAL USE WARRANTY

Black & Decker warrants this product for one year from date of purchase: We will repair without charge, any defects due to faulty material or workmanship. Please return the complete unit, transportation prepaid, to any Black & Decker Service Center or Authorized Service Station listed under "Tools Electric" in the yellow pages. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others.

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